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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/699,510
Filing Date: October 31, 2003
Appellant(s): WOLLENBERG ET AL.

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Michael E. Carmen
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed May 9, 2006 appealing from the Office action mailed November 4, 2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal: There is currently an appeal to the Board in related application serial numbers 10/699,507 and 10/699,508.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

GROUNDS OF REJECTION NOT ON REVIEW

The following grounds of rejection have not been withdrawn by the examiner, but they are not under review on appeal because they have not been presented for review in the appellant's brief. The pending rejection of the claims under the judicially created doctrine of obviousness type double patenting as being unpatentable over claims in co-pending application

serial number 10/699,529 are not presented for review by the Board. Therefore, this rejection will not be set forth herein.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

2004/0123650	Kolosov et al	7-2004
2005/0087131	Shtein et al	4-2005

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

    1. Determining the scope and contents of the prior art.
    2. Ascertaining the differences between the prior art and the claims at issue.
    3. Resolving the level of ordinary skill in the pertinent art.
    4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-4 and 6-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolosov et al (US 2004/0123650).

Kolosov et al teach of a high throughput testing method and apparatus for the screening of a library of material samples. The method and apparatus involve combinatorial chemistry that refers to the synthesis of a collection of diverse materials, and the screening of the materials for desirable performance characteristics and properties. The combinatorial approach can effectively evaluate much larger numbers of diverse compounds in a much shorter period of time. The apparatus taught by Kolosov et al includes a plurality of samples supported in wells on a substrate. Kolosov et al teach that the invention can be used to screen libraries of any flowable material that may be a commercial product itself or may be a portion of a commercial product. Exemplary commercial products that can be tested with the apparatus taught by Kolosov et al include lubricants and oils. The invention can be used to analyze the resulting properties of a particular flowing material, and to analyze the relative or comparative effects that an additive has upon a particular flowable material. Additives in a flowable material to be tested include a detergent, a flow modifier, etc. See paragraph nos. 0042-0043 in Kolosov et al. The screening for the effects of different additives upon the characteristics of a flowing material is performed by measuring various properties of the material samples present in the wells on the substrate. Properties measured include the viscosity, the density, the thermal degradation, the aging characteristics, the chemical composition and the agglomeration or sedimentation of the material samples. See paragraph no. 0065 in Kolosov et al. Once the characterizing properties of the samples are determined, the results may be mathematically combined in various combinations to provide figures of merit for the properties of interest. See paragraph no. 0066 in Kolosov et al. The sample size of each sample in the wells on the substrate is typically no greater than about 20 ml, more preferably no greater than about 5 ml, and most preferred, no greater than

about 0.5 ml. See paragraph no. 0054 in Kolosov et al. To form an array of samples on the substrate, Kolosov et al teach that the samples and additives are dispensed into the wells with any suitable dispensing apparatus (i.e. an automated micropipette or capillary dispenser). The dispensing apparatus may have a heated tip, thus providing heating of the samples. Each sample is dispensed to an individually addressable region in the substrate. See paragraph no. 0053 in Kolosov et al. The plurality of samples can vary in number depending upon the intended use of the method, and the plurality of samples can form a library. A library comprises an array of two or more different samples spatially separated on a common substrate. Candidate samples within a library may differ in a definable and predefined way, such as in chemical structure, processing, mixtures of interacting components, the relative amounts of the components, the presence of additives and other reactant materials, etc. The samples are spatially separated on the substrate such that an array of samples is separately addressable for characterization thereof. The two or more samples can reside in separate containers formed as wells in a surface of a substrate or can be simply dispensed onto a common planar substrate. See paragraph no. 0057 in Kolosov et al. The apparatus taught by Kolosov et al comprises a stimulus generator 12 that applies power to a probe 14 for applying a stimulus to one or more samples 16 in the array or library of samples. The apparatus also includes a sensor or transducer 20 for monitoring a response of one or more of the samples 16 to the stimulus. The transducer 20 and the stimulus generator 12 are both in communication with a computer sub-system 23 such as a microprocessor or other computer for manipulating data. The computer sub-system 23 may be employed to receive and store data such as responses of samples 16, material properties of samples, etc. Additionally, the computer sub-system may be employed to command other components of the system such as the stimulus

generator and the dispensing means, as well as to correlate responses of samples 16 to their respective material properties. See paragraph nos. 0067-0068 in Kolosov et al. The probe 14 may be translated, rotated, reciprocated or oscillated within the samples so as to mix the samples and subject them to different forces. See paragraph no. 0070 in Kolosov et al. For contacting the probe 14 and dispensing means with the samples 16, the samples may be moved relative to the probe 14, or alternatively, the probe 14 may be moved relative to the samples 16. Combinations of these motions may also occur serially or simultaneously. An automated system may be used to move the one or more probes and the dispensing means serially or simultaneously to the various samples of a library. A suitable automated system is a robotic system such as an XYZ robot arm that has a multiple axis range of motion such as in the orthogonal X, Y, and Z coordinate axes system. This automated system is part of or in communication with the computer sub-system 23. See paragraph nos. 0073-0074 in Kolosov et al. Kolosov et al also teach that a plurality of control samples having known material properties are also monitored in the libraries along with the samples so that the responses of the samples can be compared with the known material properties of the controls. The responses of the samples in the library can be related to the known material properties by a mathematical relationship.

Kolosov et al fail to specifically teach that the combinatorial chemistry method and apparatus for testing of commercial products can be used for the testing of a plurality of samples containing a base oil of lubricating viscosity and a lubricating oil additive in varying percentages. However, it would have been obvious to one of ordinary skill in the art at the time of the instant invention to use the method and apparatus taught by Kolosov et al for such a purpose since Kolosov et al teach that the combinatorial chemistry method and apparatus is

applicable to the testing of any commercial flowable product such as lubricants, and also teach that the products tested may include additives such as detergents, etc, therein. It also would have been obvious to one of ordinary skill in the art to use any conventional type of mixing for combining and mixing the commercial products with the additives such as static mixing, ultrasonic agitation, etc. since all of these conventional types of mixing are equivalent at uniformly mixing an additive with a sample.

NEW GROUND(S) OF REJECTION

Claims 5 and 23-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolosov et al in view of Shtein et al (US 2005/0087131). For a teaching of Kolosov et al, see previous paragraphs. Kolosov et al fail to teach that the dispensing means for dispensing the samples to be analyzed onto the substrate used to form the library includes a mixing chamber connected to a nozzle so that a lubricating base oil can be combined with an additive prior to dispensing into one of the test receptacles or wells on the substrate.

Shtein et al teach of a method and apparatus for depositing material onto a substrate. The device 100 includes a dispenser having three different channels 110, 120 and 130 that all feed into a mixing chamber 140. A nozzle 150 is connected to the mixing chamber. A heating element 160 also serves to heat the liquids in the dispenser. The channels 110 and 120 contain materials for deposition onto a substrate 170. Each channel may contain a different material that flows into the mixing chamber 140. The materials are mixed in the mixing chamber 140, and then expelled from the dispenser through the nozzle 150 using pressure from a carrier gas. See paragraph no. 0029 and Figure 1 in Shtein et al.

Based upon the combination of Kolosov et al and Shtein et al, it would have been obvious to one of ordinary skill in the art at the time of the instant invention to use a dispensing means having a mixing chamber connected to a nozzle, similar to the configuration taught by Shtein et al, in the apparatus and method of Kolosov et al so that a lubricating base oil can be combined with an additive prior to dispensing into one of the test receptacles or wells on the substrate, since Kolosov et al teach that any type of known dispensing apparatus may be used to deposit the samples on the substrate, and the use of the dispenser taught by Shtein et al would allow the fluids and additive materials to be both mixed and dispensed in a single operation, thus allowing the high-throughput method of Kolosov et al to be performed even quicker and more efficiently. It also would have been obvious to one of ordinary skill in the art to use any conventional type of mixing for combining and mixing the commercial products with the additives in the method and system disclosed by Kolosov et al such as static mixing, ultrasonic agitation, etc. since all of these conventional types of mixing are equivalent at uniformly mixing an additive with a sample.

(10) Response to Argument

It is noted that Appellant's grouping of the claims on page 4 of the appeal brief is no longer required or appropriate for inclusion therein. It is also noted that the Examiner has performed a 35 USC 112, 6th paragraph analysis of independent system claim 23, and has found that the means for combining recited in part d) and the means for dispensing recited in part (e) do invoke 35 USC 112, 6th paragraph and therefore, the different means for combining and dispensing disclosed in the instant specification are interpreted as being included within the scope of parts d) and e) of claim 23.

Appellants argue the rejection of the claims under 35 USC 103 as being obvious over Kolosov et al by stating that the reference to Kolosov et al fails to teach a high throughput system and method for screening lubricating oil compositions, under program control, wherein the oil compositions specifically comprise a major amount of at least one base oil of lubricating viscosity and a minor amount of at least one lubricating oil additive. Appellants specifically argue that it is not inherent that a lubricating oil composition has to contain a major amount of at least one base oil of lubricating viscosity and a minor amount of at least one lubricating oil additive. However, an additive, by definition, means any substance incorporated into a base material, usually in a low concentration, to perform a specific function (i.e. a stabilizer, a preservative, dispersing agent, antioxidant, etc.). See page 20 of the Condensed Chemical Dictionary as an attachment hereto. Since Kolosov et al teach that a lubricant oil can be analyzed having an additive therein as one of the embodiments of the invention (see paragraph nos. 0042-0043 of Kolosov et al), and one embodiment of an additive in a composition is a substance incorporated into a base material in a low concentration, the teaching of Kolosov et al

renders obvious the recitation in part a) of instant claim 1 reciting a major amount of at least one base oil of lubricating viscosity and a minor amount of at least one lubricating oil additive.

In further response to this argument, it is noted that the reference to Kolosov et al does teach of a high throughput system and method for screening lubricating oil compositions since the entire disclosure of Kolosov et al must be considered, even non-preferred embodiments. Kolosov et al teach of the general analysis of a large number of diverse compounds and that the compounds analyzed can be lubricants having an additive therein. See paragraph nos. 0042-0043 in Kolosov et al. Different lubricant compositions having additives therein are contained within test receptacles in an array or combinatorial library. Each of the test receptacles taught by Kolosov et al can contain a different lubricant composition since Kolosov et al teach that the candidate samples in a combinatorial array or library can differ from one another in a definable and predefined way, such as the amounts of components included within the composition, the types of additives included within the composition, etc. See paragraph no. 0061 in Kolosov et al. Kolosov et al also teach of measuring stability parameters of the different lubricant compositions such as thermal degradation parameters, aging characteristics and sedimentation of samples. See paragraph no. 0065 in Kolosov et al. Although a large number of different types of flowable samples are taught by Kolosov et al as being analyzed in a high throughput manner in a combinatorial library by measuring many different parameters, the fact remains that the disclosure of Kolosov et al does teach of the analysis of lubricant compositions having additives therein in a high throughput manner by placing many different types of the lubricant compositions in a plurality of receptacles, automatically moving the receptacles to locations for

measurement of parameters and measuring many different parameters of the samples including those associated with the long-term stability of the compositions.

Appellants argue the rejection of the claims under 35 USC 103 as being obvious over the reference to Kolosov et al by stating that nowhere does Kolosov et al disclose or suggest the high throughput method of lubricant screening as recited in the instant claims, and that nothing in Kolosov et al would lead one skilled in the art to modify the system and method for testing the genera of flowable material with any of the broad tests disclosed therein and arrive at the specifically recited high throughput method for screening lubricating oil additive compositions as recited in the instant claims. In response to this argument, it is again noted that the entire disclosure of a reference is considered prior art. Therefore, since Kolosov et al disclose the analysis of lubricant compositions having additives therein as one of the flowable materials by measuring stability parameters such as thermal degradation, aging characteristics, viscosity and sedimentation of particles in the compositions in a high throughput combinatorial library format, one skilled in the art would be motivated to perform the method and apparatus as recited in the instant claims. The primary reference to Kolosov et al does teach of a high throughput method for screening lubricating oil additive compositions under program control since Kolosov et al employ the use of combinatorial chemistry and arrays for analyzing the material properties of flowable materials such as lubricants, and such combinatorial technology is "high-throughput". See paragraph no. 0004 where combinatorial chemistry is referred to as a "high-throughput synthesis and screening methodology", and paragraph no. 0023 where Kolosov et al state that the invention refers to "a materials characterization system that can operate as a high throughput screen in a materials science research program directed to identifying, characterizing or

optimizing new or existing materials". The system and method taught by Kolosov et al is clearly automated as depicted in Figure 3 since it includes automatic means for moving the samples to parameter testing stations or moving parameter measuring means to the different samples held in wells on a substrate. See paragraph nos. 0073, 0074 and 0089 in Kolosov et al that refer to an automatic apparatus 112 including a robot arm and an XYZ movable system.

It is noted that the new ground of rejection for claims 5 and 23-37 is based upon the combination of Kolosov et al and Shtein et al since upon further consideration, it was realized that the primary reference to Kolosov et al fails to teach of combining a lubricant base oil with an additive prior to being dispensed into one of the test receptacles or wells on the substrate. The reference to Shtein et al was already of record in the application and relied upon in rejecting claims 36-37. Appellants argue that Shtein et al do not cure the deficiencies of Kolosov et al since Shtein et al fail to teach of a system and method for preparing a plurality of lubricant oil formulations, under program control, that comprises the components and steps set forth in claims 5 and 23-37. Appellants argue that Shtein et al simply disclose depositing an organic material onto a semiconductor device by way of a carrier gas, and do not deposit a liquid such as a lubricating oil composition. In response to this argument, it is noted that the primary reference to Kolosov et al teaches of a high throughout, automatic screening method and apparatus for screening a plurality of lubricant compositions, as noted above. The reference to Shtein et al is not relied upon for its teaching of what it deposits on a substrate, but rather, is relied upon for its teaching of the structure of a dispenser that serves to pre-mix reagents together therein before dispensing them onto a substrate. It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use a dispensing means having a mixing chamber

connected to a nozzle, similar to the configuration taught by Shtein et al, in the apparatus and method of Kolosov et al so that a lubricating base oil can be combined with an additive prior to dispensing into one of the test receptacles or wells on the substrate, since Kolosov et al teach that any type of known dispensing apparatus may be used to deposit the samples on the substrate (see paragraph no. 0053 in Kolosov et al), and the use of the dispenser taught by Shtein et al would allow the fluids and additive materials to be both mixed and dispensed in a single operation, thus allowing the high-throughput method of Kolosov et al to be performed even quicker and more efficiently.

(11) Related Proceeding(s) Appendix

It is noted that Appellants have not included a heading in the appeal brief for an appendix concerning related proceedings outside of the PTO in accordance with Rule 37 CFR 41.37 (c). However, there are no related proceedings outside of the PTO that are related to the appeal in this application.

(12) Evidence Appendix

It is noted that Appellants have not included a heading in the appeal brief for an evidence appendix in accordance with Rule 37 CFR 41.37 (c). However, there is no other supplementary evidence that has been relied upon by Appellants in rebutting the rejections put forth by the Examiner.

For the above reasons, it is believed that the rejections should be sustained.

This examiner's answer contains a new ground of rejection set forth in section **(9)** above. Accordingly, appellant must within **TWO MONTHS** from the date of this answer exercise one of the following two options to avoid *sua sponte* **dismissal of the appeal** as to the claims subject to the new ground of rejection:

(1) **Reopen prosecution.** Request that prosecution be reopened before the primary examiner by filing a reply under 37 CFR 1.111 with or without amendment, affidavit or other evidence. Any amendment, affidavit or other evidence must be relevant to the new grounds of rejection. A request that complies with 37 CFR 41.39(b)(1) will be entered and considered. Any request that prosecution be reopened will be treated as a request to withdraw the appeal.

(2) **Maintain appeal.** Request that the appeal be maintained by filing a reply brief as set forth in 37 CFR 41.41. Such a reply brief must address each new ground of rejection as set forth in 37 CFR 41.37(c)(1)(vii) and should be in compliance with the other requirements of 37 CFR 41.37(c). If a reply brief filed pursuant to 37 CFR 41.39(b)(2) is accompanied by any amendment, affidavit or other evidence, it shall be treated as a request that prosecution be reopened before the primary examiner under 37 CFR 41.39(b)(1).

Extensions of time under 37 CFR 1.136(a) are not applicable to the TWO MONTH time period set forth above. See 37 CFR 1.136(b) for extensions of time to reply for patent applications and 37 CFR 1.550(c) for extensions of time to reply for ex parte reexamination proceedings.

Respectfully submitted,

Maureen M. Wallenhorst

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MAUREEN M. WALLENHORST
PRIMARY EXAMINER
GROUP [redacted] 1700

A Technology Center Director or designee must personally approve the new ground(s) of rejection set forth in section (9) above by signing below:

***

Conferees:

Jill Warden Jill Ward

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SUPERVISORY PATENT EXAMINER
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Director's Designee for
New Grounds of Rejection